

GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING – SEMESTER 2 – EXAMINATION – SUMMER 2026

Subject Code: BE02000061 /BE02R00061

Date: 30/06/2026

Subject Name: Industrial Safety and Standards

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1** (a) Define industrial safety and explain its need in modern industries. **03**
(b) Identify possible electrical hazards in a workshop and suggest preventive measures. **04**
(c) Analyze the results of accidents in terms of human suffering, economic loss, and organizational image. **07**
- Q.2** (a) Define hazard and risk in the context of industrial safety. **03**
(b) Explain the structure of hazard identification and risk assessment. **04**
(c) Compare preliminary hazard analysis and hazard operability study (HAZOP). **07**
- OR
- Q.2** (c) Mention the salient provisions of the Factories Act, 1948 related to health **07**
- Q.3** (a) State the primary functions of a maintenance department. **03**
(b) Explain the relation between maintenance cost and replacement economy. **04**
(c) Analyze the impact of poor maintenance on production efficiency. **07**
- OR
- Q.3** (a) Describe the applications of tools used for maintenance. **03**
(b) List the major causes of wear in mechanical systems. **04**
(c) Analyze the consequences of using improper lubricants in machines. **07**
- Q.4** (a) Define corrosion and list factors affecting it. **03**
(b) Discuss different corrosion prevention techniques with suitable examples. **04**
(c) Use an example to explain how lubrication failure can lead to mechanical faults. **07**
- OR
- Q.4** (a) Recall the sequence of activities involved in fault finding. **03**
(b) Show how vibration analysis helps in tracing faults in rotating equipment. **04**
(c) Evaluate the importance of root cause analysis in fault tracing. **07**
- Q.5** (a) Justify the role of systematic documentation in fault tracing activities. **03**
(b) Describe the procedure of overhauling an electrical motor. **04**
(c) Compare the periodic maintenance requirements of pumps and DG sets. **07**
- OR
- Q.5** (a) Define periodic inspection and state its need. **03**
(b) Evaluate the effectiveness of preventive maintenance in reducing equipment breakdown. **04**
(c) Formulate a maintenance training module for operators of electrical motors. **07**
